Listing of claims:

1. (original) A reliable, high density, high performance semiconductor device comprising:

a) a plurality of spaced-apart substrate segments;

b) an integrated circuit chip mounted on one of said segments; and

c) a flexible interconnection layer supporting said substrate segments.

2. (original) The device of claim 1 wherein said device further includes

a plurality of conductive vias extending through one of said substrate segments connected to the terminals of said chip;

said vias also electrically and mechanically connected to pads and/or traces on a first surface of said interconnection layer.

3. (original) The device of claim 2 wherein said substrate segment having an integrated circuit chip mounted thereon is surrounded by a plurality of substrate segments on said interconnection layer, each substrate segment positioned over a plurality of external contacts on the opposite surface of said interconnection layer.

4. (original) The assembled device of claim 1 wherein said flexible interconnection layer comprises a low dielectric polymeric film having a tensile modulus in the range of 2 to 10 GPa, and one or more levels of conductive traces connecting selected layers.

5. (original) The assembled device of claim 1 wherein said substrate segments comprise a BT resin from 0.65mm to 2.5mm thick, a tensile modulus of greater than 50 GPa, and each of said segments is larger in area than said integrated circuit chip.

6. (original) The assembled device of claim 1 wherein each of said substrate segments comprises an FR-4 composite having a thickness of 0.65mm to 2.5mm, a tensile modulus of greater than 50 GPa, and each of said segments is larger in area than said integrated circuit chip.

7. (original) he assembled device of claim 1 wherein said integrated circuit chip contacts comprise flip chip bumps.

8. (original) he assembled device of claim 1 wherein said external contacts comprise solder balls.

9. (original) The assembled device of claim 1 wherein said connections between said substrate segments and said interconnection layer are comprised of solder.

10. (canceled)

11. (original) The assembled device of claim 1 further including a preformed cap covering said integrated circuit chip and its interconnections.

12. (original) A reliable, high density, high performance multi-chip module comprising:

a) a plurality of substrate segments mounted on one surface of a flexible interconnection layer;

b) a plurality of electronic components including integrated circuit chips, discrete chips, resistors, and /or capacitors mounted on the opposite surface of said interconnection layer;

c) said flexible interconnection layer including means for connecting said substrate segments, and

d) a plurality of external contacts on said substrate segments.

13. (original) The module of claim 12 wherein said electronic components are interconnected to each other and to said external contacts by a plurality of conductive vias extending through said substrate segments, and conductors on and in said flexible interconnection layer.

14. (original) The module of claim 13 wherein said substrate segments are positioned atop a plurality of external solder ball contacts on the second surface of said interconnection layer.

15. (original) The multi-chip module claim 12 wherein said electronic components are mechanically and electrically connected on the first surface of said interconnection layer and the second surface of said interconnection layer is connected to a plurality of substrate segments.

16. (original) The multi-chip module of claim 15 wherein each of said substrate segments include a plurality of conductive vias to external solder balls contacts on the second surface of said substrates.

17. (original) A flexible interconnection layer for a semiconductor device having a plurality of relatively rigid substrate segments, said interconnection layer comprising:

a dielectric material having one or more layers of conductors interconnecting said substrates, an array of external contacts under each substrate segment, and a ribbon cable connector integrated into and extending from said interconnection layer.

18. (original) The flexible interconnection layer of claim 17 wherein external contacts include solder balls and a cable connector.